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Date: November 11, 2003  
To: Examiner: John D. Lee  
Art Unit: 2874  
Fax No.: 703-872-9319  
From: Stephen P. Burr  
Subject: U.S. Application Ser. No. 09/871,067  
Filed: May 31, 2001  
Conf. No.: 1252  
Title: A METHOD FOR FORMING A POLARIZATION-INVERTED

PORTION

Our Ref.: 782\_166

You should receive 6 page(s) including this cover sheet. If you do not receive all pages, please call (315) 233-8300.

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I hereby certify that the following paper(s) is/are being facsimile transmitted to 703-872-9319 at the Patent and Trademark Office on November 11, 2003:

- Transmittal (in duplicate) 2 pages
- Request for Reconsideration 3 pages
- This Cover Sheet 1 page

  
Janet M. Stevens  
Janet M. Stevens

Total Pages

6

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**PATENT AMENDMENT TRANSMITTAL**

(Provisions of 37 CFR 1.136 Apply)

Application Number	09/871,067	Filing Date	May 31, 2001			
Group Art Unit	2874	Examiner Name	John D. Lee			
Confirmation No.	1252	Attorney Docket No.	782_166			
Inventor(s)	Shoichiro YAMAGUCHI, Tatsuo KAWAGUCHI and Takatoshi NEHAGI					
Invention:	A METHOD FOR FORMING A POLARIZATION-INVERTED PORTION					
Transmitted herewith is an Amendment in the above-identified application. The fee has been calculated as follows:						
<b>CLAIMS AS AMENDED</b>						
(1)	(2) Claims Remaining After Amendment	(3)	(4) Highest Number Previously Paid	(5) No. of Extra Claims Present	(6) Rate (Large Entity)	(7) Additional Fee
TOTAL CLAIMS	12	MINUS	20	0	\$18.00	\$00.00
INDEP. CLAIMS	1	MINUS	3	0	\$86.00	\$00.00
<b>TOTAL ADDITIONAL FEE FOR THIS AMENDMENT</b>						<b>\$00.00</b>

**EXTENSION OF TERM**

- Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.
- This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application. The requested extension and appropriate non-small entity fee are as follows:
- |  |          |
|--|----------|
| <input type="checkbox"/> One Month (37 CFR 1.17(a)(1)) .....   | \$110.00 |
| <input type="checkbox"/> Two Month (37 CFR 1.17(a)(2)) .....   | \$420.00 |
| <input type="checkbox"/> Three Month (37 CFR 1.17(a)(3)) ..... | \$950.00 |

**TOTAL FEES DUE**

- Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee amount is reduced by one-half, and the resulting fee is:

**FEES PAYMENT**

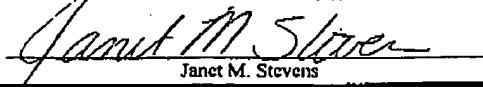
- No additional fee is required.
- A check in the amount of \$\_\_\_\_\_ is enclosed.
- Charge Deposit Account 50-1446 in the amount of \$. Enclosed is a duplicate copy of this sheet.
- Please charge any fees which may be required, or credit any overpayment, to Deposit Account 50-1446.

**Submitted By:**

Name (Print Type)	Stephen P. Burr	Reg. No.	32,970	Customer No.	025191
		Telephone	(315) 233-8300	Faximile	(315) 233-8320
Signature				Date	November 11, 2003

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Janet M. Stevens

Practitioner's Docket No.: 782\_166

**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**In re the application of: Shoichiro YAMAGUCHI, Tatsuo KAWAGUCHI and  
Takatoshi NEHAGI**RECEIVED**  
**CENTRAL FAX CENTER**

Ser. No.: 09/871,067

Group Art Unit: 2874

NOV 12 2003

Filed: May 31, 2001

Examiner: John D. Lee

Confirmation No.: 1252

**OFFICIAL**

For: A METHOD FOR FORMING A POLARIZATION-INVERTED PORTION

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450**CERTIFICATE OF FACSIMILE TRANSMISSION**I hereby certify that this paper is being facsimile transmitted to  
703-872-9319 at the U.S. Patent & Trademark Office on  
November 11, 2003.  
Janet M. Stevens**REQUEST FOR RECONSIDERATION**

Sir:

The following remarks are in response to the Final Office Action mailed August 11, 2003. Claims 1-12 are pending herein.

Examiner Lee is thanked for courtesies extended to Applicants' representative (Steven Caldwell) during a telephonic interview on November 5, 2003. The arguments discussed during the interview are reiterated below. Examiner Lee acknowledged the validity of the arguments, but requested that Applicants submit a written response to the Office Action for his further consideration.

1. Claims 1-12 were rejected under §103(a) over Papuchon et al. This rejection is respectfully traversed.

Pending independent claim 1 recites, among other things, that a first voltage is applied between a pair of electrodes to generate and grow a first polarization-inverted portion in a

substrate. A second voltage is applied between the pair of electrodes to generate and grow a second polarization-inverted portion in a different area from that of the first polarization-inverted portion. Applicants respectfully submit that the applied prior art, discussed below, does not disclose or suggest growing a second polarization-inverted portion "in a different area from that of the first polarization-inverted portion," as recited in pending claim 1.

Papuchon's Figs. 4a - 4d illustrate a method of forming an optical device. The PTO's apparent position in the Office Action is that one would have found it obvious to use a set of electrodes to apply a first voltage to polarize the ferro-electric domain of waveguide 1 in a desired direction (e.g., direction (x) shown in Fig. 4c), and then to remove a portion of the electrodes and apply a second voltage to reverse the initial direction of polarization in regions I, III and V shown in Fig. 4d. The PTO is apparently arguing that the presently claimed invention would have been obvious in light of the PTO's modified version of Papuchon. Applicants respectfully disagree.

Papuchon forms a single polarization-inverted portion (i.e., waveguide 1) by thermally defusing niobium strip 4 into substrate 3 (illustrated in Figs. 4a and 4b). A voltage is applied between a set of electrodes to polarize the crystal orientation of optical waveguide 1 in a single direction (x). A second voltage is then applied between a set of electrodes to reverse the initial direction of polarization in certain regions of optical waveguide 1 (i.e., directions x' in regions I, III and V shown in Fig. 4d). As discussed above, pending independent claim 1 recites that a second voltage is applied between first and second electrodes to generate and grow a second polarization-inverted portion "in a different area from that of the first polarization-inverted portion . . .". Applicants respectfully submit that Papuchon's disclosure of a *single polarization-inverted portion* (optical waveguide 1) that includes regions having

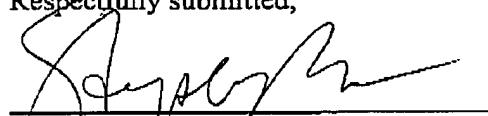
different directions of waveguide domain polarization does not teach or suggest that *a second polarization-inverted portion is generated and grown in a different area from that of the single polarization-inverted portion* (i.e., optical waveguide 1). Therefore, even if Papuchon were modified as discussed in the Office Action, there would still be no disclosure or suggestion in Papuchon of each and every element recited in pending claim 1.

In view of all of the foregoing, reconsideration and withdrawal of the §103(a) rejection over Papuchon et al. are respectfully requested.

If Examiner Lee believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, he is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

  
Stephen P. Burr  
Reg. No. 32,970

November 11, 2003  
Date

SPB:SWC:jms

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